

For Immediate Release

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Specialized video camera focuses on Hanford tank cleanup

RICHLAND, Wash.— Hanford officials are using a highly specialized video camera to help them decide how to clean up over a quarter-million gallons of radioactive sludge in one of Hanford's oldest underground tanks.

The video footage will show planners with CH2M HILL Hanford Group and the Department of Energy's Office of River Protection the best approach to take when removing waste from Tank C-104.

Operators are using a camera to see which openings in the tank's dome are available for equipment installation and to check the structural integrity of the tank dome. They are also looking at the surface of the waste to see what might get in the way of retrieving the sludge, such as equipment that had been dropped into the tank over the decades.

"This is another important step in our ongoing commitment to retrieve and treat Hanford tank waste to protect the Columbia River," said Harry Boston, Manager of the Department of Energy's Office of River Protection.

"This work is crucial to starting the effort to get solid waste out of Hanford's single-shell tanks," said Rick Raymond, CH2M HILL Hanford Group vice president of projects. "The video we shoot will allow us to make decisions on the best way to clean up this tank and other tanks like it."

The camera system used to inspect the tank is highly specialized for work in Hanford tanks. Only 2.9 inches in diameter, the camera is small enough to fit through a 4-inch opening in the tank.

The high-resolution video camera is fastened to the front end of a 21-inch long assembly with remote-controlled motors that allow the camera to pan and tilt. The assembly is made of stainless steel, which makes it easier to decontaminate and use again.

The stainless steel material is also spark-resistant, which is an important safety feature for operating in a potentially flammable hydrogen gas environment. Filtered air continuously flows around the camera's internal parts, pressurizing the camera housing to keep hydrogen gas away from potential spark sources.

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After the camera is lowered into a tank, a light pops out and allows operators to see to a distance up to 75 feet. The camera's zoom capabilities are important for being able to see the entire tank, which is 75 feet wide and over 35 feet high, and for getting close-ups of small areas of interest.

The DOE Office of River Protection and CH2M HILL are working toward a Tri-Party Agreement milestone to build and demonstrate the sludge waste retrieval technology in Tank C-104 by 2008.

Tank C-104 is a 530,000-gallon tank constructed with a single carbon steel shell surrounded by thick concrete. It was among the first large underground tanks built in the 1940s to receive waste from nuclear materials production at Hanford and contains the most plutonium in any of Hanford's 177 large underground tanks—approximately 89 kilograms.

Tank C-104 is similar in design to, but not one of, the 67 tanks that have leaked or are assumed to have leaked approximately one million gallons of radioactive waste to the soil in the past. Nearly all of the liquid waste in the tank had been removed by 1989, part of a program to reduce the risk of leaks in the older single-shell tanks.

“While removing the liquid waste was an important step, we're working toward getting the remaining waste out of this and other single-shell tanks so it can be treated,” said Raymond. “That gets us closer to the ultimate goal of closing the tanks and solving the Hanford tank waste problem for good.”

CH2M HILL Hanford Group, Inc. is DOE's Office of River Protection prime contractor with responsibility for storing, characterizing and retrieving for treatment approximately 53 million gallons of highly radioactive and hazardous waste stored in 177 underground tanks.

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Note: Video footage of the camera installation is available.